Chapter 2
Applied AI vs. Theoretical AI

ABSTRACT

Artificial intelligence (AI) has become a powerful force in today's society, economy, and industry. In this chapter, the authors set out to investigate the dynamic interaction between two essential components of artificial intelligence: theoretical AI and applied AI. The chapter begins with an introduction to the fundamental ideas behind artificial intelligence (AI), tracing its roots back to Alan Turing's ground-breaking work and the continuing impact of the Turing Test. It clarifies the various definitions and objectives of AI, separating systems that imitate human knowledge and thought from those more concerned with imitating human behaviour. The investigation of Applied AI, an area of AI that focuses on real-world problem solving, is a key theme of this chapter. In this study, the authors clarify the essential rules governing the application of AI concepts and technology to actual business problems. This chapter emphasises the crucial abilities and knowledge needed to succeed in this discipline. In essence, applied AI converts theoretical knowledge into useful solutions.

INTRODUCTION

Artificial intelligence (AI), a fast-developing field, aims to create intelligent computers with cognitive capacities similar to those of humans. It includes a variety of methods, strategies, and algorithms that allow computers to carry out operations such as speech recognition, problem solving, and learning that otherwise require human intellect. The work of British mathematician and computer scientist Alan Turing is responsible for one of the turning points in the development of artificial intelligence. 1950 In his seminal work “Computing Machinery and Intelligence”, Turing laid the groundwork for the development of artificial intelligence. Turing explored the potential of machines to exhibit intelligent behaviour and introduced

DOI: 10.4018/979-8-3693-4074-5.ch002

Copyright © 2025, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

the concept of a test that could determine the machine's ability to mimic human intelligence. The Turing Test constituted a crucial turning point in the advancement of AI. According to the Turing Test, a computer is deemed artificially intelligent if it can behave intelligently during a conversation that cannot be distinguished from that of a person. This examination spurred discussions about the definition of intelligence and established a standard for assessing AI programs.

Thinking Humanly

This viewpoint attempts to create AI systems that can imitate human thoughts and reasoning. It aims to comprehend and imitate human intelligence to build robots that can think, comprehend, and solve problems comparable to those of humans.

Acting Humanly

This concept of AI focuses on creating systems capable of carrying out activities or displaying behaviours identical to those of humans. To enable seamless contact between humans and robots, machines can be built to mimic human movements, emotions, and reactions.

Reasoning Logically

This approach to AI strongly emphasises the creation of systems that can logically reason. It focuses on formalising human thinking into logical frameworks and algorithms so that robots can make defensible conclusions and handle challenging issues.

Behaving Rationally

This definition of AI emphasises the creation of systems that can act reasonably, even when the behaviour differs from that of humans. It does not matter if the outcomes resemble human behaviour; the goal is to build robots to make the best choices possible in light of information and objectives. These four AI definitions and aims emphasise the many viewpoints and goals of the area. While some researchers prioritise imitating human intellect, others prioritise creating systems that behave logically or successfully carry out particular jobs. The ultimate objective of artificial intelligence is to build smart machines that can supplement human talents, increase productivity, and spur innovation in various fields.

26 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/applied-ai-vs-theoretical-ai/357431

Related Content

Global Perspective on EMR and eHealth: Sentiment Analysis of Twitter Data Incorporating a Socio-Technical Framework
Rangarajan Parthasarathy, Anuradha Rangarajan, Monica Garfieldand Prasad Bingi (2024). *International Journal of Intelligent Information Technologies (pp. 1-29).*
www.irma-international.org/article/global-perspective-on-emr-and-ehealth/343046

A Brownian Agent Model for Analyzing Changes in a Nation's Product Space Structure
Bin Jiang, Chao Yang, Takashi Yamadaand Takao Terano (2015). *International Journal of Intelligent Information Technologies (pp. 52-71).*
www.irma-international.org/article/a-brownian-agent-model-for-analyzing-changes-in-a-nations-product-space-structure/128839

Analysis of Older Users' Perceived Requests and Opportunities with Technologies: A Scenario-Based Assessment
Mari Feli Gonzalez, David Facal, Ana Belen Navarro, Arjan Geven, Manfred Tscheligi, Elena Urdanetaand Javier Yanguas (2011). *International Journal of Ambient Computing and Intelligence (pp. 42-52).*
www.irma-international.org/article/analysis-older-users-perceived-requests/52040

A Measure Optimized Cost-Sensitive Learning Framework for Imbalanced Data Classification
Peng Cao, Osmar R. Zaianeand Dazhe Zhao (2017). *Artificial Intelligence: Concepts, Methodologies, Tools, and Applications (pp. 611-640).*
www.irma-international.org/chapter/a-measure-optimized-cost-sensitive-learning-framework-for-imbalanced-data-classification/173354

The Future of AI and Environmental Sustainability: Challenges and Opportunities
Ranjith Gundeti, Kaushik Vuppalaand Varun Kasireddy (2024). *Exploring Ethical Dimensions of Environmental Sustainability and Use of AI (pp. 346-371).*
www.irma-international.org/chapter/the-future-of-ai-and-environmental-sustainability/334968